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United States Patent [19]

Sogabe et al.

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[54] CREATINE AMIDINOHYDROLASE,  
PRODUCTION THEREOF AND USE  
THEREOF

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## FOREIGN PATENT DOCUMENTS

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[\*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

## [57] ABSTRACT

A creatine amidinohydrolase having the following physico-chemical properties:

Action: catalyzing the following reaction;  
 $\text{creatine} + \text{H}_2\text{O} \rightarrow \text{sarcosine} + \text{urea}$

Optimum temperature: about 40–50° C.

Optimum pH: pH about 8.0–9.0

Heat stability: not more than about 50° C. (pH 7.5, 30 min)

Km value for creatine in a coupling assay using a sarcosine oxidase and a peroxidase: about 3.5–10.0 mM

Molecular weight: about 43,000 (SDS-PAGE)

Isoelectric point: [3.5] 4.5.

a method for producing said enzyme, comprising culture of microorganism producing said enzyme, a method for the determination of creatine or creatinine in a sample using said enzyme, and a reagent therefor.

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## [30] Foreign Application Priority Data

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[51] Int. Cl.<sup>7</sup> ..... C12Q 1/34; C12N 9/78;  
C12N 1/20; C12N 1/00

[52] U.S. Cl. .... 435/18; 435/227; 435/192;  
435/252.3; 435/320.1; 435/829; 435/252.33

[58] Field of Search ..... 435/18, 227, 252.1,  
435/320.1, 829, 192, 252.3, 252.33

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23 Claims, 2 Drawing Sheets